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Research Report 1578

A Cross-Sectional Comparison of Army Advertising Attributes

Todd A. Baker
U.S. Army Research Institute

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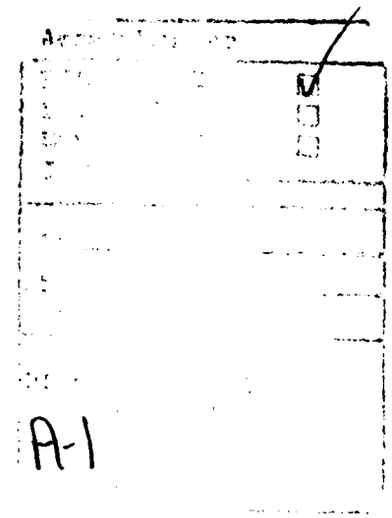

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This research examined the advertising attribute items from the New Recruit Survey (NRS), Recruit Experience Tracking Survey (RETS), and the Army Communications Objectives Measurement Survey (ACOMS). The data analyzed were collected from 1986 to 1989. The attribute items asked respondents for their perceptions of various opportunities offered by the Army. Factor analyses resulted in three factors for the NRS, two for the RETS, and one for six of the eight ACOMS samples. The common factors found related to self-improvement and work/education. Mean comparisons within each survey found that respondents perceived self-improvement attributes and money for education as greater opportunities than aspects of work. Comparisons across surveys found that new soldiers (NRS) perceived greater Army opportunities than experienced soldiers (RETS) and youth (ACOMS). The youth sample perceived more Army opportunities than experienced soldiers. Issues concerning inflated expectations of new soldiers, the different frames of reference employed by each sample, and the appropriateness of the items are presented.

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Research Report 1578

A Cross-Sectional Comparison of Army Advertising Attributes

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FOREWORD

Our nation's relatively low unemployment rate and the declining pool of 17- to 21-year-old youths are creating increasing demands on the U.S. Army's recruiting resources and personnel. This demand may not be lessened by force reductions because such reductions are being accompanied by budget cuts for recruiting and in increases in requirements for the most highly qualified recruits. The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has designed and executed three surveys (New Recruit Survey (NRS), Recruit Experience Tracking Survey (RETS), and the Army Communications Objectives Measurement Survey (ACOMS)) that assess respondents' perceptions of opportunities offered by the Army. The U.S. Army Recruiting Command (USAREC) uses this information to design marketing strategies and to evaluate such recruiting programs as the Army College Fund incentive. This research examines the responses to advertising attribute items from the three surveys to determine how the different survey samples perceive Army opportunities and identify any differences across the survey samples.

This ARI effort is part of an ongoing research program designed to enhance the quality of Army personnel. This work is part of the mission of ARI's Manpower and Personnel Policy Research Group (MPPRG) to conduct research to improve the Army's ability to effectively and efficiently recruit its personnel. This research was undertaken in response to a request by the Director of the Programs, Analysis, and Evaluation Directorate, USAREC, dated 22 February 1990. Results of this research were provided to the Chief, Advertising Research and Analysis, USAREC, 12 July 1990.

The findings from this research can be used by military personnel planners to identify how perceptions differ among youth, new soldier, and experienced soldier samples. These results can also be used to point out the attributes that need more advertising emphasis. Furthermore, the results also suggest further investigations into related areas (e.g., realistic job previews) that are needed to improve the match between new and experienced soldier expectations.

EDGAR M. JOHNSON
Technical Director

A CROSS-SECTIONAL COMPARISON OF ARMY ADVERTISING ATTRIBUTES

EXECUTIVE SUMMARY

Research Requirement:

In order to assess the impact of the Army's advertising strategy and campaigns, surveys are needed that determine what impact advertising has on perceptions of Army opportunities. Examination of survey items that identify perceptions of the Army are needed to evaluate and develop advertising strategies. This report examined the responses to these advertising attributes from three surveys to determine how Army opportunities were being perceived by youth, new soldier, and experienced soldier samples.

Procedure:

The data analyzed in this research were collected from three surveys: the New Recruit Survey (NRS), the Recruit Experience Tracking Survey (RETS), and the Army Communications Objectives Measurement Survey (ACOMS). These surveys were administered to new soldiers, experienced soldiers, and youth, respectively. The variables of interest were those that asked respondents to determine to what extent the Army offered a particular opportunity or attribute. The number of attribute items on a survey ranged from 13 (ACOMS Reserve, National Guard, Civilian Work) to 18 (NRS). Responses to these items for each survey were factor analyzed. Attribute means were also compared within and across the three surveys.

Results:

The factor analyses found three factors for the NRS responses, two factors for the RETS, and one factor for six of the eight ACOMS samples. The common factors that were found included self-improvement and work/education related. The NRS had an additional factor, women's opportunities, that resulted from three items that were unique to this survey. A number of mean differences were found between factors within each of the surveys, suggesting that the attributes are perceived differently. A common finding for all surveys was that respondents saw greater opportunities in the Army for self-improvement items and money for education than for items related to work in the Army and civilian sector. Comparison across the surveys found the NRS means to be the highest; most NRS means were significantly higher than corresponding RETS and ACOMS means. ACOMS had the next highest

means and RETS had the lowest attribute means. These findings indicated that new soldiers saw the greatest opportunities in the Army, while experienced soldiers saw the least opportunity.

Utilization of Findings:

The significant differences between NRS and RETS means identified the need for further investigation into the use of realistic job previews (RJPs). The findings suggested that the perceptions of new soldiers do not match those for experienced soldiers. Further, these findings can be used to determine appropriate survey sources for advertising-related information. Attribute responses from the NRS and RETS may not be good measures of advertising effectiveness because soldiers use information from sources other than advertising (e.g., recruiters, Army experience) to respond to the items.

A CROSS-SECTIONAL COMPARISON OF ARMY ADVERTISING ATTRIBUTES

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A CROSS-SECTIONAL COMPARISON OF ARMY ADVERTISING ATTRIBUTES

INTRODUCTION

One of the primary challenges of the Armed Services is to attract acceptable numbers of qualified individuals to fill the military's manpower demands. The Armed Services have had to compete with the private sector, educational institutions, and one another for these individuals. Even with the projected reductions in force, the demand will still be present. Such reductions may be accompanied by recruiting budget cuts and increased enlistment standards.

In order to attract qualified individuals, the Army invests in economic incentives (i.e., enlistment and educational bonuses) based on market research that identifies the needs and characteristics of individuals in the Armys' prime market, as well as their exposure to Army advertising. One way the Army collects market research data is through survey administration and analysis. Examples of these surveys include the New Recruit Survey (NRS), the Recruit Experience Tracking Survey (RETS), and the Army Communications Objectives Measurement System (ACOMS). These surveys collect information about the attitudes and perceptions that individuals have about the Army. Survey items directly related to advertising may ask individuals if they can recall Army commercials or to assess an opportunity that the Army offers. Responses to the advertising-related survey items provide the Army with information concerning the effectiveness of past advertising campaigns and information for developing new ones that may improve the recruitment of high quality individuals.

This report examines the advertising attribute items from three surveys (NRS, RETS, and ACOMS) to determine how each survey sample grouped the items. Factor analysis was used to identify these groupings. Further, item means were compared both within and across the three surveys. Mean comparisons were conducted to identify differences in perceived opportunities within a sample and examine how the responses for the same attribute varies across youth (ACOMS), new soldier (NRS), and soldier (RETS) samples. These results examined Army advertising by determining how a particular advertising attribute is perceived in terms of how much the Army offers an opportunity to achieve the attribute. Responses to the advertising attributes are intended to determine advertising effectiveness. Gaertner and Greenlees (1988) noted that individuals with more favorable perceptions of the attributes are more likely to undertake enlistment-related behaviors. Thus, if individuals believe that the Army offers a good opportunity for a particular attribute that is important to them, it may increase the chances of their enlistment. Responses determine how advertising intending to display opportunities for various attributes in the Army affected individuals' perceptions of Army opportunities. Examination of how the advertising attributes are grouped can determine what larger attributes, or components, the Army offers an opportunity for. Comparison of

item means across surveys can determine whether perceptions vary for youth, new soldiers, and more experienced soldiers.

Previous Research

No previous research was found that conducted factor analysis on the NRS or RETS advertising attributes. For ACOMS, Wilson, Davis, and Greenlees (1988) conducted factor analyses on the responses to the advertising attributes for the Army as well as the Reserves, National Guard, Navy, Air Force, Marine Corps, and a general military Service category. Results found one-factor solutions for the Army, Army Reserves, and general military service responses. For these branches of the Armed Forces, respondents did not differentiate between the attributes; all attributes were seen as related to one another. For the National Guard, Navy, Air Force, and Marine Corps, two-factor solutions were found. Although two factors were found, only the Marine Corps sample had a solution where both factors were interpretable. For the Marines, one factor reflected **self-improvement** (e.g., physical challenge, proud experience, mental challenge, developing responsibility and maturity) and the other reflected **aspects of work** (e.g., work with high-tech equipment, skill training, civilian career development). For the other services with two-factor solutions, many items loaded on both factors (i.e., cross-loadings) making the factors less distinct from one another and less interpretable. Thus, the factor solutions for all services, with the exception of the Marine Corps, appeared to be one-factor solutions.

The means or percentage of positive responses have been examined for the three surveys. Nieva and Gay (1988) examined the means of the ACOMS advertising attributes. The advertising attributes with the highest means for the Active Army included: **physical challenge, working with high-tech equipment, money for education**, and **develop responsibility and maturity.** The lowest means for the Active Army included: **advantage over going right from high school to college, civilian career development**, and **variety of job opportunities.** These results were similar to the findings for video advertisements examined by Baxter and Gay (1988). Baxter and Gay had youth watch videotapes of Army advertisements then asked them to recall the advertisements and the attributes presented. It was found that the youth gave the highest ratings of being shown in the advertisement to: **working with high-tech equipment, proud experience**, and **developing potential.** The lowest ratings were given to: **advantage over going right from high school to college, civilian career development**, and **variety of job opportunities.** These findings suggested that Army advertising is most influential for the attributes with the highest scores and least influential for attributes with lower scores.

For the Army Reserves and National Guard, Nieva and Gay (1988) found the highest means for **developing responsibility and maturity** and **serving in hometown** and the lowest means for **interesting weekends, civilian career development**, and **variety of**

job opportunities. In addition to the relatively consistent findings between the Active Army, Army Reserves, and Army National Guard, Nieva and Gay also found that the responses to the advertising attributes were consistent over a nine-month time period.

Elig (1989) compared ACOMS attribute responses across propensities to serve in the military, go to college, and work in a civilian job. He found that youth saw greater opportunities for going to college than Army enlistment, but more opportunities in the Army than civilian work. However, when asked what they would be doing in the future, youth mentioned college and civilian work above Army enlistment. Thus, their response to the question about their future did not fully agree with their beliefs about opportunities.

Elig and Benedict (1990) conducted a longitudinal comparison between the attribute responses for the RETS and NRS. The responses examined were those where the same soldier completed the NRS when entering the Army and the RETS one to three years later. Results found that the percentage of soldiers agreeing that the Army offers a particular opportunity was higher for the NRS than the RETS for 13 of the 14 attributes. The largest discrepancies occurred for: 1) **variety of job opportunities**, 2) **civilian career development**, 3) **skill training**, 4) **working with quality co-workers**, and 5) **working with high-tech equipment.** In general, the percentages for the NRS sample were high, ranging from approximately 70% (advantage over going right from high school to college) to 97% (physical challenge) of the new soldiers agreeing that the Army offered an opportunity. For the RETS the percentages were consistently lower ranging from 45% (mental challenge) to 88% (money for education). From these results, it appeared that soldiers perceive greater opportunities in the Army in their first three days they do one to three years later.

Bray, Jordan, and Bailey (1989) examined the advertising attribute responses from the Youth Attitude Tracking Survey (YATS). The YATS is a telephone survey of a nationally representative sample of youth. YATS asks youth which of the following services offered the greatest opportunity for a particular attribute with the choices being Army, Navy, Air Force, and Marine Corps. For six of the ten attributes, the Army was mentioned first. Those attributes included: 1) **money for education**, 2) **skill training**, 3) **equal pay for men and women**, 4) **opportunities for promotion and advancement**, 5) **defending the country**, and 6) **being close to a combat zone.** Although the YATS addressed advertising attributes, it was not included in the present research because the attribute measurement scales could not be directly compared to the NRS, RETS, and ACOMS items. Furthermore, only three attributes on the YATS were similar to the attributes on the other surveys.

Research Purpose

For current research I conducted separate factor analyses using the advertising attributes from the Active Army and Reserve Components forms of the NRS, RETS, and eight samples of ACOMS (Army, Army Reserve, Army National Guard, Navy, Marine Corps, Air Force, Service, and Civilian Work). The results for the ACOMS samples were compared to the findings of Wilson, et al (1988). Results from the present research should be similar to the findings of Wilson, Davis, and Greenlees because the same data sets were used. Results from all factor analyses were used to identify how respondents grouped the attributes into categories and how these categories varied across the surveys.

The current research findings added to the previous factor analysis research on the attributes. For this research, factor analyses were conducted for all surveys in addition to ACOMS. Results from these analyses were used to confirm the previous ACOMS factor analyses as well as compare factor patterns across three surveys. Comparisons determined if one survey sample saw opportunities differently than the other samples. In addition, the eight samples from ACOMS were compared to determine if branches of the Armed Forces were perceived differently and if differences exist between the Armed Forces and Civilian Work.

Attribute means for each survey were also generated. These means were examined to identify mean differences between the perceptions of attributes within a survey. This was done to determine what attributes had the highest and lowest perceived opportunities for a particular sample. Means for the same attribute were also compared across the three surveys to determine how perceptions may differ between youth (ACOMS), new soldier (NRS), and soldier (RETS) samples.

The present research extended the work of Elig and Benedict (1990) in two ways. First, this research added a third youth sample (ACOMS) to the analyses. Elig and Benedict examined longitudinal differences across the NRS and RETS. This addition allowed comparisons between youth, new soldier, and soldier samples. Although this addition extended comparisons to a youth sample, it eliminated a strict longitudinal design. A sample of soldiers completed both the NRS and RETS making comparisons longitudinal; however, there is no such match with ACOMS. As a result, responses from the surveys were not made by the same individuals and the design is cross-sectional/longitudinal. Second, the present research examined and compared the means of the attributes rather than percentages. Use of the means made the use of statistical techniques (e.g., two-sample t-tests, Tukey's studentized range test (HSD)) to identify mean differences possible. These techniques provided more conclusive findings on whether observed differences between attributes were statistically significant.

It was hypothesized that the factor structures would have more factors as experience with the Army increased. This would mean that the responses from ACOMS (youth) would have the fewest factors, followed by the NRS (new soldiers). Responses from the RETS (soldiers) would have the most factors. Factor structures would differ in this way because those with greater experience in the Army would be able to make more, finer distinctions between attributes than those with less experience. It was also hypothesized that the factor structures for the ACOMS responses would be similar to those found by Wilson, et al (1988).

It was also hypothesized that the highest means would be for the NRS. NRS means were believed to be the highest because it has been found that perceptions are highest when one is just beginning a job or career (Bray, Campbell & Grant, 1974; Vroom, 1966). These perceptions then drop off over time. If this finding is confirmed for the Army, then the means for the NRS should be higher than the means for RETS and ACOMS. However, a drop in means from NRS to RETS could also show the need for further research into realistic job previews (RJPs) (Premack & Wanous, 1985) for new soldiers. Finally, it was expected that RETS means would be higher than corresponding ACOMS means because of the high proportion of youth in the ACOMS sample with a negative propensity to enlist in the Army.

SURVEY PROCEDURES AND SAMPLES

The NRS is a paper and pencil survey developed to collect information concerning the enlistment motivators, attitudes, knowledge, and characteristics of new soldiers. The Army Research Institute for the Behavioral and Social Sciences (ARI) surveyed soldiers at Army reception battalions from 1982 to 1986. Since 1987, the U.S. Army Recruiting Command (USAREC) has had this responsibility. These findings are then used to determine the motives behind why certain individuals enlist in the Army and develop recruiting and advertising strategies that coincide with the views of the targeted market and sub-markets. For a more complete description of NRS background, content, and administration see Elig, Hertzbach, and Johnson (1984) and Benedict (1987).

The RETS was a paper and pencil survey developed to collect information concerning soldiers' perceptions and attitudes about their Army experiences as well as to identify sources of soldier satisfaction and dissatisfaction (Young, 1989). This information was collected in order to improve the Army's reenlistment rate and to examine the influence of enlistees motivations and incentives on soldier satisfaction and reenlistment. ARI mailed a survey to the Active Army soldiers who had completed the NRS in administration years 1986 or 1987. The soldiers then completed the survey on their own time and returned it. A total of 11,130 surveys were mailed and 4256 were returned. For a more complete description of the RETS see Benedict (1990).

The ACOMS was a computed assisted telephone interview developed to collect information about the effects Armed Forces advertising had on 16- to 24-year old youth. ACOMS also gathered information concerning youths' perceptions and attitudes about the Armed Forces. ACOMS data analyzed in this report were from the primary male and female samples. Youth in these samples were high school diploma graduates or currently enrolled in high school or college when interviewed. These youth were located through random digit dialing. Once it was determined that the youth met the eligibility criteria, they completed the 30-minute telephone interview. For a more complete description of the ACOMS see Nieva, Wilson, and Allen (1988).

The items of interest for this research were those that asked soldiers or youth to assess the level in which a specific military service or civilian work offers various opportunities. These advertising attribute items were phrased similarly for the three surveys. For the Active Army and Reserve Components NRS, there are 18 of these advertising attribute items. The RETS contained 14 advertising attribute items. For the ACOMS, the Army, Navy, Marine Corps, and Air Force versions had 14 items; and the Reserve, National Guard, and Civilian Work versions had 13 items. A list of the advertising attribute items contained in each version of each survey is presented in Table 1. A more detailed list of advertising attribute items is presented in Appendix A.

All of these items are responded to on a 5-point scale indicating the level that a respondent agreed or disagreed that a military service or civilian work offers a particular opportunity. The anchors on the scale included: agree completely, agree somewhat, neither agree or disagree, disagree somewhat, and disagree completely.

A total of 24,488 Active Army non-prior military service soldiers surveyed in NRS 1986 to 1989 were included in the analyses. For the Reserve Components, 4,969 non-prior military service soldiers surveyed in NRS years 1988 and 1989 were included. Reserve Components responses for NRS years 1986 and 1987 were not included in the analyses because these items were not included in the surveys. A total of 4,237 Active Army soldiers surveyed in 1989 completed the RETS.

For the ACOMS, a total of 12,955 youths were surveyed during the 1986/87 school year. The breakdown of sample sizes for youth who were asked the eight ACOMS list was: Army - 11,151, Army Reserves - 1,788, National Guard - 1,815, Navy - 1,260, Marine Corps - 1,299, Air Force - 1,292, general military Service - 1,305, and Civilian Work - 1,275. The sample sizes for the ACOMS Army and the seven other ACOMS categories varied so greatly because of the sampling procedure. Youth who completed the interview were asked to respond to the attributes for only two of the eight categories. Most individuals were asked to respond to the advertising attributes for the Active Army and one of the other branches of the Armed Forces or Civilian Work. The second

category was selected at random by the researchers. As a result, most individuals provided responses for the Army, but only a sample of youth provided responses for the remaining categories.

RESULTS

The results are divided into two major sections. In the first section, the results of the factor analyses for the NRS, RETS, and ACOMS advertising attributes are presented. Second, means for the items from the surveys are presented and differences in means reported.

Factor Analyses

Responses to the advertising attributes were factor analyzed to determine how the respondents grouped the items. Factor analysis is a statistical technique used to group item responses into factors based on the degree of correlation or covariation among item responses. The particular factor analysis method used was Principle Components Analysis with communality estimates of one for each item. The rotation method used was PROMAX which is a SAS procedure (SAS Institute, Inc., 1985) that provides both orthogonal (VARIMAX) and oblique (PROMAX) rotations. The PROMAX rotation was utilized because item responses were believed to be correlated. The same factor analysis method and rotation were used for all factor analyses.

NRS Active Army. The factor analysis on the 18 importance items suggested that there are three factors. The results of this analysis, with factor loadings, are presented in Table 2.

The first factor was labeled **Self-Improvement**. All items grouped into this factor, with the exception of **service to country**, reflect some specific aspect of individual improvement.

The second factor was labeled **Work Related**. This factor included items that pertain to aspects of work in the Army or opportunity for work in the civilian sector.

The third factor was labeled **Men/Women Benefits**. Items in this factor pertain to opportunities and benefits for women in the Army.

Three of the 18 items did not load significantly (.40 or higher) on a factor. These items were: **money for education**, **advantage over going right from high school to college**, and **leadership skills**. For the two items associated with education and college, different respondents may have interpreted them in different ways. Some respondents may have seen these items as distinct from the **Self-Improvement** and **Work Related** factors, while others may have related them to one of the factors. For example, if some soldiers saw **money for education** as a means to get money for a technical school, they may have related the item to the work-related items. On the other hand, other soldiers may have seen it as a means for money for college and related it to

Table 1

Advertising Attribute Items by Survey

	NRS AA	NRS RC	RETS	ACOMS Service	ACOMS RC	ACOMS Work
Job Opportunities	X	X	X	X	X	
Physical Challenge	X	X	X	X		X
Proud Experience	X	X	X	X	X	X
H.S. - College Step	X	X	X	X		X
Leadership Skills	X	X	X	X	X	X
High-Tech Equipment	X	X	X	X		X
Civilian Career	X	X	X	X	X	X
Self Confidence	X	X	X	X	X	X
Potential	X	X	X	X	X	X
Mental Challenge	X	X	X	X	X	X
Mature	X	X	X	X	X	X
Skill Training	X	X	X	X	X	X
Quality Co-workers	X	X	X	X	X	X
Money for Education	X	X	X	X	X	X
Women/Men Belong	X	X				
Beneficial to Women/Men	X	X				
Women Prove Themselves	X	X				
Service to Country	X	X				
Interesting Weekends					X	
Serve in Hometown					X	

ACOMS Service category was made up of Active Army, Navy, Marine Corps, Air Force, and Military Service lists.

AA - Active Army
RC - Reserve Components

Table 2

Rotated Factor Pattern of the Active Army NRS Advertising Attributes

		Self-Improvement	Work Related	Men/Women Benefits
Y019	Mental Challenge	.788		
Y018	Potential	.788		
Y017	Self Confidence	.778		
Y020	Mature	.722		
Y012	Proud Experience	.704		
Y011	Physical Challenge	.676		
Y027	Service to Country	.602		
Y010	Job Opportunities		.806	
Y021	Skill Training		.733	
Y015	High-Tech Equipment		.705	
Y022	Quality Co-workers		.649	
Y016	Civilian Career		.408	
Y024	Women/Men Belong			.892
Y025	Beneficial to Women/Men			.878
Y026	Women Prove Themselves			.759
Y023	Money for Education	.378		
Y013	H.S. to College Step		.386	
Y014	Leadership Skills		.391	
Proportion of Variance Accounted for		.385	.091	.062

self-improvement. With different interpretations, their correlations with other items and factor loadings would be lower. This explanation also applies to the **leadership skills** item.

NRS Reserve Components. The factor analysis on the 18 advertising attribute items for the combined Army Reserve and National Guard samples (referred to as Reserve Components) also found a three factor solution. The results of the factor analysis are presented in Table 3.

The first factor was labeled **Self-Improvement**. The items that loaded on this factor were the same ones that loaded on the **Self-Improvement** factor for the NRS Active Army sample.

The second factor was labeled **Work Related** and the items in this factor were similar to those for the NRS Active Army. However, two items, **advantage over going right from high school to college** and **leadership skills** loaded on this factor for the Reserve Components. These items did not load on the Active Army factor. The Reserve Components soldiers may have saw these items as more related to a work-related component than Active Army soldiers.

Table 3

Rotated Factor Pattern of the Reserve Components NRS

Advertising Attributes

		Self-Improvement	Work Related	Men/Women Benefits
Y019	Mental Challenge	.817		
Y018	Potential	.813		
Y017	Self Confidence	.793		
Y020	Mature	.755		
Y011	Physical Challenge	.674		
Y012	Proud Experience	.671		
Y027	Service to Country	.498		
Y010	Job Opportunities		.751	
Y015	High-Tech Equipment		.732	
Y021	Skill Training		.721	
Y022	Quality Co-workers		.700	
Y016	Civilian Career		.571	
Y013	H.S. - College Step		.459	
Y014	Leadership Skill		.411	
Y024	Women/Men Belong			.891
Y025	Beneficial to Women/Men			.872
Y026	Women Prove Themselves			.717
Y023	Money for Education	.361		
Proportion of Variance Accounted for		.401	.090	.059

The third factor was labeled **Men/Women Benefits** and was identical to the **Men/Women Benefits** factor for the Active Army.

Only one item (**money for education**) did not load significantly on any of the factors. Similar to the explanation for the Active Army, different interpretations of this item may have led to lower correlations and factor loadings.

RETS. Results of the factor analysis found that the 14 RETS advertising attribute items were clustered into two factors. The results of the RETS factor analysis are presented in Table 4.

Table 4

Rotated Factor Pattern of the RETS Advertising Attributes

		Self-Improvement/ Education	Work Related
R069	Self Confidence	.857	
R072	Mature	.843	
R070	Potential	.730	
R066	Leadership Skills	.726	
R075	Money for Education	.613	
R071	Mental Challenge	.567	
R064	Proud Experience	.531	
R065	H.S. - College Step	.500	
R062	Job Opportunities		.821
R067	High-Tech Equipment		.786
R073	Skill Training		.752
R074	Quality Co-workers		.706
R068	Civilian Career		.611
R063	Physical Challenge	.373	
Proportion of Variance Accounted for		.504	.067

The first factor was labeled **Self-Improvement/Education.** With a few exceptions, items that loaded on this factor were similar to those for the NRS **Self-Improvement** factors. One difference was that the education related items were seen as more related to **Self-Improvement** by the experienced soldiers than the new soldiers. Another difference was that **leadership skills** loaded on this factor for the RETS sample while this item did not load on any factor for the Active Army NRS sample. On the other hand, **physical challenge** did not load on this factor for the RETS sample, but did load for the NRS samples.

The second factor was labeled **Work Related** and was similar to the NRS **Work Related** factors.

One item (**physical challenge**) did not load significantly on any factor. This finding suggested that **physical challenge** was not seen by soldiers as highly related to the items within either factor. Furthermore, a **Men/Women Benefits** factor was not found for the RETS because the three items that loaded on this factor appeared on the NRS, but not on the RETS.

ACOMS. Separate factor analyses were run for each military service (Army, Navy, Marine Corps, Air Force), Reserves, National Guard, Military Service in general, and Civilian Work. Results of these analyses found one factor solutions for the Army, Navy, Air Force, Reserves, National Guard, and Service responses. For the Marine Corps and Civilian Work, two factor solutions were found. Results of the Marine Corps factor analysis are presented in Table 5.

The first factor for the Marine Corps responses was labeled **Self-Improvement**. This factor included items associated with some aspect of individual improvement. This factor resembles the NRS **Self-Improvement** factors.

The second Marine Corps factor was labeled **Work/Education Related**. This factor included items that are associated with education, work in the Marine Corps, and work in the civilian sector.

The Marine Corps items were probably grouped into two factors because youth distinguished between items related to the internal aspects of being a Marine and all other items. This pattern was not found for the other services because youth perceptions of the Marine Corps may vary from the other services. Advertising for the Marine Corps appears to involve more **Self-Improvement** (i.e., "the few, the proud, the Marines"; "we're looking for a few good men") aspects and fewer **Work/Education Related** aspects than the other services. Such advertising may make it easier to distinguish between the two aspects, because advertising has not been used to raise the perception of work and education related aspects of the Marine Corps to the level that advertising has been used for the **Self-Improvement** aspects.

The results of the factor analysis for the Civilian Work items are presented in Table 6. Similar to the factor solutions for the Marine Corps and NRS, a distinction was made between those items that address work and education (**Work/Education Related**) and those items that deal with more internal, individual improvement (**Self-Improvement**). However, the factors for the Civilian Work items are not as "clean" as the other factor solutions. Items that would appear to be more congruent with work and education (**skill training, civilian career**) loaded into the **Self-Improvement** factor. **Physical challenge** which seems to be more congruent with **Self-Improvement** loaded into the **Work/Education Related** factor. Finally, **leadership skills** had

significant loadings for both factors. Specific reasons why these loadings vary from the other factor solutions is not known. However, the findings do show that youth see Civilian Work and military opportunities differently.

Comparisons of Item Means

Mean comparisons were conducted to determine which attributes varied in perceived opportunity for both within and across the surveys. The mean comparisons were carried out using two-sample t-tests or Tukey's HSD (SAS Institute, Inc., 1985). Item differences within each sample are reported first followed by differences across the samples.

Table 5

Rotated Factor Pattern of the Marine Corps ACOMS

Advertising Attributes

		Self-Improvement	Work/Education Related
YMPHYS	Physical Challenge	.893	
YMSELCON	Self Confidence	.852	
YMMATURE	Mature	.735	
YMLEADER	Leadership Skill	.684	
YMPROUD	Proud Experience	.650	
YMPOTEN	Potential	.613	
YMMENTAL	Mental Challenge	.550	
YMWIDE	Job Opportunities		.849
YMSTEP	H.S. - College Step		.799
YMCASHED	Money for Education		.661
YMTRAIN	Skill Training		.630
YMHIQUAL	Quality Co-workers		.612
YMCIVCAR	Civilian Career		.593
YMHITECH	High-Tech Equipment		.556
Proportion of Variance Accounted for		.522	.076

NRS Active Army. New soldiers perceived that the Army offered the greatest opportunities for: **physical challenge, money for education, service to country, proud experience,** and **mental challenge.** Those items that the Army was seen to offer the least opportunity for were: **advantage over going right from high school to college, working with quality co-workers, women belonging in the Army as much as men,** and **leadership skills.**

Table 6

Rotated Factor Pattern of the Civilian Work ACOMS Advertising Attributes

		Self-Improvement	Work/Education Related
YWPOTEN	Potential	.834	
YWMENTAL	Mental Challenge	.806	
YWMATURE	Mature	.781	
YWSELCON	Self Confidence	.769	
YWCIVCAR	Civilian Career	.689	
YWPROUD	Proud	.475	
YWTRAIN	Skill Training	.424	
YWCASHED	Money for Education		.769
YWSTEP	H.S. - College Step		.764
YWPHYS	Physical Challenge		.567
YWHITECH	High-Tech Equipment		.510
YWHIQUAL	Quality Co-workers		.485
YWLEADER	Leadership Skill	.402	.454
Proportion of Variance Accounted for		.456	.076

Results of the Tukey's HSD found a total of 108 significant differences between item means suggesting that the perceived opportunity for Army opportunities varies. The items mentioned above represented the groups of items with the highest and lowest means that do not differ from one another. The means for the five items with the greatest perceived opportunity were found to be significantly greater than the means of the items perceived to have the least opportunity. The item means for the NRS Active Army are presented in Table 7.

NRS Reserve Components. Similar to the NRS Active Army means, a number of significant mean differences (56) were also found for the Reserve Components. The greatest perceived opportunities were found for: **service to country, physical challenge, proud experience, money for education,** and **mental challenge.** Respondents saw that the Reserves or National Guard offers the least opportunities for: **working with quality co-workers, advantage over going right from high school to college, leadership skills, working with high-tech equipment,** and **women belonging in the Army as much as men.** The means for the items that make up the high and low opportunity groups were found to be

significantly different from one another. With the exception of **working with high-tech equipment**, the items were the same as those found with the NRS Active Army sample. Item means for the NRS Reserve Components are presented in Table 8.

RETS. Tukey's HSD found 55 significant differences between pairs of means. The greatest opportunities that the Army offers as seen by more experienced soldiers were: **money for education, leadership skills, developing maturity and responsibility, developing self confidence**, and **physical challenge**. The opportunities that the soldiers perceived the Army offered the least were: **working with quality co-workers, working with high-tech equipment, civilian career development, variety of job opportunities**, and **skill training**. The means for the items that make up the high opportunity group were found to be significantly greater than the means in the low opportunity group. Item means for the RETS are presented in Table 7.

ACOMS Army. Tukey's HSD found 45 significant differences between pairs of means. The items with the highest means included: **physical challenge, working with high-tech equipment, money for education, develop responsibility and maturity**, and **working with quality co-workers**. The items with the lowest means included: **advantage over going right from high school to college, civilian career development**, and **variety of job opportunities**. The highest and the lowest means were found to be significantly different from one another. Item means for the ACOMS Active Army sample are presented in Table 7.

ACOMS Reserves. Tukey's HSD found eight significant differences between the means. It was found that the mean for **interesting weekends** was significantly less than the means for a) **developing responsibility and maturity**, b) **money for education**, c) **working with quality co-workers**, d) **serving in hometown**, e) **skill training**, f) **leadership skills**, g) **developing self confidence**, and h) **proud experience**. Although not significant from the highest means, other items with lower means included: **civilian career development, variety of job opportunities**, and **mental challenge**. Item means for the ACOMS Reserve sample are presented in Table 9.

The lists of highest and lowest item means for ACOMS Reserve varied from the lists for ACOMS Active Army. The reason for these differences was that there were different items for the Active Army and Reserves. The Active Army respondents were not asked about opportunities for **interesting weekends** and **serving in**

Table 7

Item Means, Standard Deviations, and Mean Differences for the Active Army NRS, RETS, and Army ACOMS Advertising Attributes

	NRS	RETS	ACOMS	ACOMS PP	DIFFS.[a]	DIFFS.[b]
Job Opportunities	4.335 (0.943)	3.522 (1.279)	3.705 (1.067)	4.205 (0.917)	NRS > ACOMS,RETS ACOMS > RETS (d = .148)	NRS,ACOMS > RETS (d = .176)
Physical Challenge	4.751 (0.601)	4.034 (1.021)	4.181 (0.941)	4.364 (0.842)	NRS > ACOMS,RETS (d = .162)	NRS > ACOMS,RETS ACOMS > RETS (d = .190)
Proud	4.657 (0.706)	3.867 (1.100)	3.932 (1.021)	4.390 (0.838)	NRS > ACOMS,RETS (d = .158)	NRS > ACOMS,RETS ACOMS > RETS (d = .187)
H.S. - College Step	4.059 (1.030)	3.629 (1.224)	3.458 (1.161)	3.955 (1.029)	NRS > RETS,ACOMS RETS > ACOMS (d = .142)	NRS,ACOMS > RETS (d = .168)
Leadership Skills	4.180 (0.915)	4.165 (0.980)	3.971 (0.976)	4.283 (0.866)	NRS,RETS > ACOMS (d = .150)	
High-Tech Equipment	4.328 (0.848)	3.256 (1.259)	4.154 (0.940)	4.404 (0.841)	NRS > ACOMS,RETS ACOMS > RETS (d = .151)	ACOMS,NRS > RETS (d = .174)
Civilian Career	4.302 (0.863)	3.342 (1.200)	3.599 (1.053)	4.103 (0.908)	NRS > ACOMS,RETS ACOMS > RETS (d = .146)	NRS > ACOMS,RETS ACOMS > RETS (d = .173)

Table 7 (concluded)

	NRS	RETS	ACOMS	ACOMS PP	DIFFS.[a]	DIFFS.[b]
Self Confidence	4.570 (0.751)	4.042 (1.002)	3.967 (0.989)	4.341 (0.829)	NRS > RETS,ACOMS (d = .157)	NRS > ACOMS,RETS ACOMS > RETS (d = .185)
Potential	4.552 (0.731)	3.833 (1.115)	3.896 (0.991)	4.274 (0.843)	NRS > ACOMS,RETS (d = .155)	NRS > ACOMS,RETS ACOMS > RETS (d = .183)
Mental Challenge	4.621 (0.734)	3.782 (1.237)	3.866 (1.037)	4.242 (0.875)	NRS > ACOMS,RETS (d = .157)	NRS > ACOMS,RETS ACOMS > RETS (d = .185)
Mature	4.525 (0.776)	4.047 (1.091)	4.088 (1.004)	4.432 (0.853)	NRS > ACOMS,RETS (d = .157)	NRS,ACOMS > RETS (d = .184)
Skill Training	4.475 (0.802)	3.561 (1.158)	4.032 (0.969)	4.359 (0.830)	NRS > ACOMS,RETS ACOMS > RETS (d = .154)	NRS,ACOMS > RETS (d = .180)
Quality Co-workers	4.099 (0.963)	3.194 (1.222)	4.050 (0.968)	4.348 (0.852)	NRS,ACOMS > RETS (d = .146)	ACOMS > NRS,RETS NRS > RETS (d = .168)
Money for Education	4.685 (0.680)	4.411 (0.863)	4.089 (0.960)	4.378 (0.850)	NRS > RETS,ACOMS RETS > ACOMS (d = .162)	NRS > RETS,ACOMS (d = .190)

Sample sizes varied from 23,955 to 24,226 for NRS, from 4,174 to 4,193 for RETS, from 11,113 to 11,151 for ACOMS, and from 1,674 to 1,680 for ACOMS Positive Propensity.

[a] Significant differences between NRS, RETS, and ACOMS samples.

[b] Significant differences between NRS, RETS, and ACOMS Positive Propensity for the Army samples.

Table 8

Item Means, Standard Deviations, and Mean Differences for the Active Army and Reserve Components NRS Advertising Attributes

	Active Army	Reserve Components	
Job Opportunities	4.335 (0.943)	4.228 (0.988)	
Physical Challenge	4.751 (0.601)	4.579 (0.796)	AA > RC t = 2.31
Proud	4.657 (0.706)	4.566 (0.792)	
H.S. - College Step	4.059 (1.030)	4.009 (1.059)	
Leadership Skills	4.180 (0.915)	4.065 (0.973)	
High-Tech Equipment	4.328 (0.848)	4.100 (0.968)	AA > RC t = 3.32
Civilian Career	4.302 (0.863)	4.165 (0.933)	AA > RC t = 2.02
Self Confidence	4.570 (0.751)	4.454 (0.830)	
Potential	4.552 (0.731)	4.448 (0.812)	
Mental Challenge	4.621 (0.734)	4.488 (0.861)	
Mature	4.525 (0.776)	4.436 (0.850)	
Skill Training	4.475 (0.802)	4.330 (0.892)	AA > RC t = 2.04
Quality Co-workers	4.099 (0.963)	4.000 (1.006)	
Money for Education	4.685 (0.680)	4.565 (0.812)	

Table 8 (concluded)

	Active Army	Reserve Components
Women/Men Belong	4.146 (1.122)	4.133 (1.168)
Beneficial to Women/Men	4.326 (0.994)	4.258 (1.064)
Women Prove Themselves	4.290 (0.967)	4.200 (1.022)
Service to Country	4.682 (0.692)	4.619 (0.742)

Sample sizes varied from 23,853 to 24,226 for the Army and from 4,840 to 4,926 for the Reserve Components.

one's hometown. On the other hand, Reserve respondents were not asked about opportunities for **physical challenge, working with high-tech equipment,** and **advantage over going right from high school to college.** All of these items were perceived as good or poor opportunities by their respective samples.

ACOMS National Guard. Tukey's HSD procedure found nine significant mean differences for the National Guard sample. It was found that the mean for **interesting weekends** was significantly less than the means for a) **developing responsibility and maturity,** b) **money for education,** c) **working with quality co-workers,** d) **serving in hometown,** e) **developing self confidence,** f) **skill training,** g) **leadership skills,** and h) **proud experience.** These were the same differences that were found for the ACOMS Reserve sample. Furthermore, the mean for **civilian career development** was significantly lower than the mean for **developing responsibility and maturity.** Other attributes with lower means included a **variety of job opportunities** and **mental challenge.** Item means for the ACOMS National Guard sample are presented in Table 9.

ACOMS Navy, Marine Corps, and Air Force. For each of the three sample, Tukey's HSD procedure found the mean for **advantage over going right from high school to college** to be significantly lower than the means for a) **working with high-tech equipment,** b) **developing responsibility and maturity,** c) **skill training,** and d) **working quality co-workers.** For the Marine Corps and Air Force samples, the **high school to college step** item means were also significantly lower than the means for a) **proud experience,** b) **leadership skills,** c) **developing self confidence,** and d) **mental challenge.** For the Marine Corps and Navy samples, the mean for **money for education** was also significantly greater than the mean

Table 9

Item Means, Standard Deviations, and Mean Differences for the ACOMS Army, Reserves, National Guard, Navy, Marines, Air Force, and Service Advertising Attributes

	Army	Reserve	Guard	Navy	Marines	AF	Service	
Job Opportunities	3.705	3.549	3.493	3.557	3.439	3.671	3.656	
	(1.067)	(1.011)	(1.038)	(1.053)	(1.095)	(1.031)	(1.054)	
Physical Challenge	4.181	---	---	3.859	4.296	3.848	4.133	Army > AF,Navy
	(0.941)	---	---	(0.997)	(0.950)	(1.011)	(0.959)	Marine>AF,Navy
								(d = .321)
Proud	3.932	3.788	3.733	3.831	3.908	4.005	3.926	
	(1.021)	(0.980)	(0.985)	(1.065)	(1.057)	(0.966)	(1.028)	
H.S. - College Step	3.458	---	---	3.325	3.227	3.387	3.339	
	(1.161)	---	---	(1.165)	(1.188)	(1.160)	(1.183)	
Leadership Skills	3.971	3.807	3.785	3.818	3.961	3.945	3.980	
	(0.976)	(0.943)	(0.962)	(1.008)	(1.004)	(0.972)	(0.994)	
High-Tech Equipment	4.154	---	---	4.061	3.926	4.298	4.127	AF > Marine
	(0.940)	---	---	(0.965)	(1.008)	(0.878)	(0.936)	(d = .321)
Civilian Career	3.599	3.495	3.443	3.465	3.400	3.616	3.510	
	(1.053)	(0.986)	(1.017)	(1.077)	(1.095)	(1.048)	(1.080)	
Self Confidence	3.967	3.806	3.801	3.817	4.024	3.991	3.929	
	(0.989)	(0.943)	(0.967)	(1.017)	(1.005)	(0.963)	(1.014)	
Potential	3.896	3.736	3.711	3.743	3.851	3.936	3.847	
	(0.991)	(0.969)	(0.986)	(1.058)	(1.036)	(0.971)	(1.009)	
Mental Challenge	3.866	3.645	3.603	3.779	3.876	4.005	3.834	AF > AR,NG
	(1.037)	(1.004)	(1.029)	(1.039)	(1.099)	(0.974)	(1.048)	(d = .335)

Table 9 (concluded)

	Army	Reserve	Guard	Navy	Marines	AF	Service
Mature	4.088	3.900	3.897	3.920	4.053	4.064	4.031
	(1.004)	(0.965)	(1.001)	(1.043)	(1.031)	(0.964)	(0.977)
Skill Training	4.032	3.823	3.786	3.897	3.803	4.014	4.049
	(0.969)	(0.969)	(0.974)	(0.982)	(1.011)	(0.952)	(0.955)
Quality Co-workers	4.050	3.847	3.826	3.975	3.843	4.171	4.017
	(0.968)	(0.978)	(0.957)	(1.015)	(1.040)	(0.925)	(0.970)
Money for Education	4.089	3.895	3.837	3.882	3.811	3.917	4.008
	(0.960)	(0.956)	(0.995)	(0.992)	(1.002)	(1.000)	(0.993)
Interesting Weekend	---	3.303	3.293	---	---	---	---
	---	(1.112)	(1.116)	---	---	---	---
Serve in Hometown	---	3.826	3.807	---	---	---	---
	---	(1.088)	(1.069)	---	---	---	---

Sample sizes varied from 11,113 to 11,151 for the Army, from 1,774 to 1,788 for the Reserve, from 1,795 to 1,814 for the National Guard, from 1,249 to 1,260 for the Navy, from 1,284 to 1,299 for the Marines, from 1,277 to 1,292 for the Air Force, and from 1,299 to 1,305 for Service.

for **high school to college step.** For the Marines sample, this item mean was also significantly lower than the means for **physical challenge** and **developing potential.**

Significant differences were also found comparing the **civilian career development** and **variety of job opportunities** means with other item means. For the Marine Corps sample, these item means were significantly lower than the means for **physical challenge, developing self confidence,** and **developing responsibility and maturity.** The mean for **leadership skills** was also found to be significantly greater than the mean for **civilian career development.** For the Air Force, the mean for **working with high-tech equipment** was greater than these two means. The **civilian career development** means were also significantly lower than the means for **working with quality co-workers** in the Air Force sample and **working with high-tech equipment** for the Navy sample. Item means for the three services are presented in Table 9.

ACOMS Civilian Work. For this sample, the means for **advantage over going right from high school to college** and **working with high-tech equipment** were the lowest of the 13 means. Tukey's HSD procedure found the mean for high school to college step to be significantly lower than the means for: a) **developing responsibility and maturity,** b) **proud experience,** c) **developing self confidence,** d) **developing potential,** e) **mental challenge,** f) **skill training,** g) **working with quality co-workers,** and h) **civilian career development.** The means for high school to college step were the lowest across all ACOMS samples where this item was included in the interview. The mean for **working with high-tech equipment** was also significantly lower than the mean for **developing responsibility and maturity.** The item means for the ACOMS Civilian Work sample are presented in Table 10.

Comparison of NRS Active Army, RETS, and ACOMS Army Samples. Tukey's HSD procedure was used to compare the means for the same items across the three samples. Comparisons were only made for those items that were included in the three surveys. The items that addressed **service to country** and **women's opportunities** in the NRS were not examined. Results of these mean comparisons and the critical difference values are presented in Table 7.

The findings indicated that the highest item means were from the NRS. All NRS item means were significantly higher than the means for the corresponding RETS and ACOMS items with the exception of **quality co-workers** for ACOMS and **leadership skills** for RETS. Further, no ACOMS or RETS item means were significantly higher than the corresponding NRS item means.

The next highest item means were from the ACOMS. The ACOMS item means significantly greater than the corresponding RETS item means included: **variety of job opportunities, working with high-tech equipment, civilian career development, skill training,** and **working with quality co-workers.**

Three RETS item means were significantly greater than corresponding item means from the ACOMS. These differences were for the **high school to college step, leadership skills,** and **money for education** items.

Comparison of NRS Active Army, RETS, and ACOMS Positive Propensity Army Samples. ACOMS means may have been lowered because the majority of youth sampled had a negative propensity for Army enlistment (indicated on another item that they would probably not or definitely not join the Army). The negative propensity individuals saw less opportunity in the Army resulting in lower means and pulling down the total mean. Further analysis comparing the NRS and RETS samples to an ACOMS positive propensity sample was also conducted. Although the positive propensity group consisted of youth who would seriously consider joining the Army, it is a sample with that does not accurately reflect the Army population. Orvis and Gahart (1985) found that almost half of the recruits come from the negative propensity group. Despite the limitation, the positive propensity sample was examined because it served as a measure of a "positive" youth sample. Results of these mean comparisons and the critical difference values are presented in Table 7.

For the three surveys, the NRS still had the highest means. Seven item means for the NRS were significantly higher than the corresponding item means for ACOMS and 13 means for the NRS were higher than corresponding RETS means. However, the item mean for **working with quality co-workers** on the ACOMS was significantly higher than the corresponding mean on the NRS.

With the positive propensity ACOMS sample there were more significant differences between ACOMS and RETS item means. For all item means with the exception of **leadership skills** and **money for education**, the ACOMS item means were significantly higher than the RETS item means. No item means on the RETS were significantly higher than any corresponding item means on the NRS or ACOMS.

Comparison of NRS Active Army and NRS Reserve Components. Two-sample t-tests were conducted to compare the means of the NRS Active Army and Reserve Components samples. T-tests for each of the 18 items found four significant differences. For each of the differences, respondents in the Active Army sample perceived a greater opportunity than the Reserve Components respondents. Item means for **working with high-tech equipment, physical challenge, skill training,** and **civilian career development** were significantly higher for the Active Army sample. Results of these mean comparisons and the t-values are presented in Table 8.

Comparison of the ACOMS Military Services. Tukey's HSD procedure was used to compare the item means for the ACOMS Army, Reserve, National Guard, Navy, Marine Corps, Air Force, and Service responses. Results of this procedure found seven significant differences. The Army and Marine Corps were perceived to provide significantly greater opportunity for

Table 10

Item Means and Mean Differences for the ACOMS Military and Civilian Work Advertising Attributes

	Military	Civilian Work	
Physical Challenge	3.848 - 4.296	3.472	Military > Work (d = .343)
Proud	3.733 - 4.005	3.746	
H.S. - College Step	3.227 - 3.458	3.146	Army > Work (d = .296)
Leadership Skills	3.785 - 3.980	3.597	Service,Army, Marines > Work (d = .359)
High-Tech Equipment	3.926 - 4.298	3.410	Military > Work (d = .343)
Civilian Career	3.400 - 3.616	3.679	
Self Confidence	3.801 - 4.024	3.727	
Potential	3.711 - 3.936	3.717	
Mental Challenge	3.603 - 4.005	3.713	
Mature	3.897 - 4.088	3.947	
Skill Training	3.786 - 4.049	3.711	
Quality Co-workers	3.826 - 4.171	3.693	AF > Work (d = .366)
Money for Education	3.811 - 4.089	3.457	Army,Service,AF, Reserve,Navy, Guard > Work (d = .366)

Sample sizes varied from 1,271 to 1,275 for Civilian Work. Military combines Army, Reserve, Guard, Navy, Marine Corps, Air Force, and Service responses. When Military is listed in the difference column, it indicates that all military samples were significantly different from Civilian Work.

physical challenge than the Air Force and Navy. The Air Force was seen to provide a significantly greater **opportunity to work with high-tech equipment** than the Marine Corps. Furthermore, the item mean for **working with quality co-workers** was significantly higher for the Air Force than corresponding means for the Reserve and National Guard.

Two-sample t-tests were used to compare the means for the **interesting weekends** and **serve in hometown** items between the Reserve and National Guard samples. No significant differences were found for these two items. Results of these mean comparisons and the critical difference values are presented in Table 9.

Comparison of the ACOMS Military Services and Civilian Work. Mean comparisons were made between the ACOMS military samples (Army, Reserves, National Guard, Navy, Marine Corps, Air Force, and Service) and the Civilian Work sample using Tukey's HSD procedure. Results found 21 significant differences between the mean of a military service and Civilian Work. All the differences found indicated that the military service means were significantly greater than the corresponding Civilian Work means. For the **physical challenge** and **working with high-tech equipment** items, all military service means were significantly higher than the Civilian Work mean. For the **money for education** item, all military service means, with the exception of Marine Corps, were significantly greater than the Civilian Work mean. The **leadership skills** means for the Army, Marine Corps, and Service were also significantly higher than the Civilian Work mean. Furthermore, the **high school to college step** mean for the Army and the **working with quality co-workers** mean for the Air Force were significantly greater than the corresponding Civilian Work means. Results of these mean comparisons and the critical difference values are presented in Table 10.

Comparison of NRS and ACOMS Reserve Components. Two-sample t-tests were conducted for each pair of NRS and ACOMS item means. Results of the t-tests found significant differences for each of the 11 items. For each difference, the mean for the NRS Reserve Components was significantly greater than the mean for the ACOMS Reserve Components. Results of these mean comparisons and the t-values are presented in Table 11.

DISCUSSION

Summary of Factor Analyses

Results of the factor analyses for the three surveys provided some support for the hypothesis that perceptions of those more knowledgeable of the Army would be grouped into more factors. Factor solutions for the NRS and RETS had three and two factors respectively. ACOMS factor solutions, with the exception of Marine Corps and Civilian Work, had one factor. The one factor solutions for many ACOMS samples suggested that youth do not see distinctions among the Army opportunities, rather they

see one, general opportunity. However, RETS did not have more factors than the NRS. One reason for this was that the NRS had more attributes. Attributes that addressed **women's opportunities** on the NRS were not included on the RETS. These women's attributes formed one of the three NRS factors. Other reasons for similar factor solutions for NRS and RETS were the number of attributes on the survey, and that the results may have reflected the "true" relationship among the attributes.

First, the low number of attributes on the Active Army NRS (18 items) and RETS (14 items) may have led to a low number of factors. The number of items being placed into a factor analysis does have an influence on the number of resulting factors. Second, the attributes may actually be best fit into the **Self-Improvement** and **Work/education Related** factors that were commonly found. This may be true because all factor solutions with more than one factor had a factor labeled **Self-Improvement** and one labeled **Work** or **Work/Education Related**. Given the attributes on the surveys, the two factor solution may be the common soldier perception of Army opportunities.

Comparison with previous research. In general, the present factor analysis results for the ACOMS samples did not agree with the results from Wilson, et al. (1988), as the two factor solutions for the National Guard, Navy, and Air Force were not found in the present effort. This difference was surprising because both efforts used the same data sets. The reason for this difference is in the factor analysis methods used and interpretations of the factor analysis results. Wilson, et al used a different method of factor analysis than the present research. Different methods of factor analysis can lead to different results. The unconventional interpretation of the results by Wilson, et al. also led to different conclusions. First, the factor loading criterion used (.50) was higher than is commonly used. Second, their interpretation of cross-loadings (when an item loads on more than one factor) varied from the present research. Wilson, et al. placed items with cross loadings into the factor that the item loaded highest on. Cross-loaded items were not included on any one factor in the present research. The inclusion of cross-loaded items by Wilson, et al. led to their interpretation of two factors (their two factor solutions have a number of cross-loaded items). I believe here that the inclusion of cross-loadings made most of their two factor solutions difficult to interpret. If the cross-loaded items were deleted, one factor solutions would result.

Although most of the ACOMS samples had one factor solutions, the Marine Corps and Civilian Work sample solutions had two factors. The solution for the Marine Corps supported the solution found by Wilson, et al (1988). These solutions suggested that the opportunities in the Marine Corps and Civilian Work are seen differently than for the other services. The Marine Corps had two factors probably because of their advertising and the common perception of the Marine Corps. Marine Corps advertising appears to be directed solely at **Self-**

Table 11

Item Means, Standard Deviations, and Mean Differences for the NRS and ACOMS Reserve Components Advertising Attributes

	NRS	ACOMS	
Job Opportunities	4.228 (0.988)	3.521 (1.025)	NRS > ACOMS t = 9.57
Proud	4.566 (0.792)	3.760 (0.983)	NRS > ACOMS t = 10.27
Leadership Skills	4.065 (0.973)	3.796 (0.952)	NRS > ACOMS t = 3.79
Civilian Career	4.165 (0.933)	3.469 (1.002)	NRS > ACOMS t = 9.59
Self Confidence	4.454 (0.830)	3.803 (0.955)	NRS > ACOMS t = 8.49
Potential	4.448 (0.812)	3.723 (0.978)	NRS > ACOMS t = 9.45
Mental Challenge	4.488 (0.861)	3.624 (1.017)	NRS > ACOMS t = 11.13
Mature	4.436 (0.850)	3.898 (0.983)	NRS > ACOMS t = 7.02
Skill Training	4.330 (0.892)	3.804 (0.972)	NRS > ACOMS t = 7.00
Quality Co-workers	4.000 (1.006)	3.836 (0.968)	NRS > ACOMS t = 2.34
Money for Education	4.565 (0.812)	3.866 (0.976)	NRS > ACOMS t = 8.87

Sample sizes varied from 4,875 to 4,926 for the NRS and from 3,569 to 3,602 for ACOMS.

Improvement type themes. This advertising strategy would make distinctions between **Self-Improvement** and **Work Related** items greater which would result in two factors. The common perception of the Marine Corps also may make this distinction greater.

Reasons why opportunities in Civilian Work were perceived differently are not clear. Attributes for Civilian Work fit into **Self-Improvement** and **Work/Education Related** factors which was similar to the perceptions from soldiers. Perhaps the distinction between **Self-Improvement** and **Work/Education Related** attributes was greater for Civilian Work. A common perception of Civilian Work does not emphasize **Self-Improvement** attributes as much as perceptions of military service.

Comparison of Means Within Surveys

NRS. For the Active Army and Reserve Components NRS, soldiers saw the greatest opportunity for **Self-Improvement** type attributes. With the exception of **money for education**, the five highest means were attributes related to **Self-Improvement.** Most of the attributes on the Active Army and Reserve Components NRS perceived to have the least opportunity were **Work/Education Related** and **Women's Opportunities** type items.

These results suggested that new soldiers saw the Army offering greater opportunities for **Self-Improvement** and **money for college** than for developing skills for college and work. Opportunities for women were also seen as lower than opportunities for **Self-Improvement.** Although there were differences, attribute means for the NRS were all high. Means for the lowest Active Army (**advantage over going right from high school to college** - 4.059) and Reserve Components (**working with quality co-workers** - 4.000) attributes still indicated that soldiers agreed that the Army offered an opportunity for these attributes.

RETS. For the RETS, the greatest opportunities were seen for **money for education** and **Self-Improvement** attributes. The lowest means were associated with **Work Related** attributes. Similar to new soldiers, more experienced soldiers saw greater opportunity in the Army for **money for education** and **Self-Improvement** than for developing skills for work. Although the lowest mean (3.194) (**working with quality co-workers**) was lower than any mean for the NRS, more soldiers agreed that this opportunity was present than disagreed.

ACOMS. For the ACOMS Army, Reserves, and National Guard samples, respondents saw the greatest opportunities for attributes that covered **Self-Improvement**, work, and education. The highest means were: 1) **physical challenge**, 2) **working with high-tech equipment**, 3) **money for education**, 4) **develop responsibility and maturity**, and 5) **working with quality co-workers.** The lowest means appeared to be associated with the opportunity that the Army offers for **civilian career enhancement.** However, even the lowest mean, **high school to college step** (3.458), indicated that a majority of respondents agreed that the opportunity existed.

Summary of attribute means results. Some consistency was found in perceptions across the surveys. All item means suggested that more individuals agreed that the opportunity existed in the Army than disagreed. It appeared that respondents saw aspects of **Self-Improvement** and **money for education** as opportunities that the Army effectively offered. On the other hand, **Work Related** items were not seen as positively as **Self-Improvement** items. It was also apparent that respondents from all samples did not think the Army offered a good opportunity as a **step between high school and college.** I recommend that the Army focus advertising strategy on the Army as a positive step between high school and college in addition to work-related components. Changes in some Army policies may also be needed to make these attributes more attractive.

Comparison of Means Across Surveys

NRS, RETS, ACOMS. Comparison of the common items across surveys found the NRS to have the highest attribute means supporting the second hypothesis. For 12 of the 14 attributes, the NRS mean was significantly higher than the RETS or ACOMS means. Although not significant, the NRS means for the remaining two attributes were higher than the RETS or ACOMS means. In general, ACOMS means were next highest and RETS means the lowest.

It was not surprising that the NRS attributes had the highest means. It is known that an individual's perception of a job and expectations are highest when the he or she is entering the position (Bray, et al, 1974; Vroom, 1966). Furthermore, the new soldiers may expect the Army to offer the opportunities mentioned by the attributes. Obviously, the individual would not join the Army if he or she thought the Army did not offer desireable opportunities. The soldier is entering the Army to either improve him or herself, develop skills for a civilian career, or get money for college. The soldier may, in fact, want and expect all these opportunities. As a result, the means for the NRS attributes were the highest.

It was surprising that the attribute means for the youth respondents (ACOMS) were higher than the means for soldiers (RETS). It was expected that RETS means would be lower than NRS means because job expectations drop off after an individual has been at a position for awhile (Bray, et al, 1974; Vroom, 1966). However, due to the majority of youth having a negative propensity for Army enlistment in the ACOMS sample, RETS means were expected to be higher. One reason for these findings may be that the two samples are responding to the attributes using different frames of reference. The youth sample's knowledge about the Army comes mainly from advertising while the soldiers draw from past experiences that they have had. Further discussion of the frames of reference will be presented later.

Comparisons across ACOMS samples. Differences across the ACOMS military service samples uncovered two conclusions. First, youth perceived the Marine Corps and Army to offer greater

physical challenges than the Air Force and Navy. Second, the Air Force is perceived as being more technical than some other services with its high-tech mean being greater than the corresponding means for Marine Corps, Reserves, and National Guard.

Comparisons between the military services and civilian work samples found that youth perceived greater opportunities in the military than in civilian work. The Army was seen to offer greater opportunities for **physical challenge, working with high-tech equipment, money for education, leadership skills,** and **an advantage over going right from high school to college** than civilian work. Furthermore, the Reserves and National Guard were perceived to offer greater opportunities for **physical challenge, working with high-tech equipment,** and **money for education** than civilian work. These differences reflected the success of Army advertising for the attributes whose means were found to be greater than civilian work.

Do the Attributes Really Assess Advertising Effectiveness?

NRS. The high means for the attributes on the NRS would suggest that Army advertising is effective. Soldiers agreed that the Army offered an opportunity to accomplish all the attributes. However, these results should be interpreted with caution for two reasons.

First, the perceptions of new soldiers are not created just through advertising. Contact with a recruiter adds a great deal to the soldiers' perceptions of the opportunities the Army offers. New soldiers were using information from advertising and recruiters as a frame of reference for responding to the items. This is evident when comparing NRS and ACOMS responses. It is also possible that the responses reflect information from recruiters more than advertising. With the influence of recruiter information, it is questionable whether the NRS attributes measure only advertising effectiveness. Furthermore, because recruiters may need to "sell" the Army to potential recruits, inflated expectations of Army opportunities may be inflated.

Second, the responses to the NRS attributes are positively biased. This is evident in the significant differences between NRS and RETS responses. This positive bias may be due to the time when the NRS is administered. The NRS is completed when the new soldier arrives at the reception station. The soldier is just beginning his or her Army career. It was mentioned earlier that at this point in one's career, perceptions of a job and expectations are highest (Bray, et al, 1974; Vroom, 1966). These high expectations may be due to two reasons. First, the new soldiers want and expect the opportunities mentioned by the attributes to be offered by the Army. The soldier wants to believe that joining the Army was the best decision for him or her. If the individual does not believe that great opportunities exist in the Army, he or she will question the decision made to

join the Army. As a result of these feelings, the new soldiers make themselves believe that joining was the best choice they could have made and that the Army offers great opportunities for all attributes. These feelings are shown in the positive responses for all attributes. This process of making a decision and then believing that the decision was correct in order to avoid questioning oneself is known as cognitive dissonance (Festinger, 1957). It is possible that cognitive dissonance may be occurring and is reflected in NRS responses.

The second reason behind the high expectations may be that new soldiers are not getting an adequate realistic job preview (RJP) before beginning their Army careers. New soldiers may enter the Army with inflated expectations and be unaware of how "things really are" in the Army. The differences between NRS and RETS responses point out the mismatch in expected opportunities between new and more experienced soldiers. This reason does not agree with the conclusions of Lockhart, Wagner, and Cheng (1987). In an examination of the Joint Optical Interactive Network (JOIN), Lockhart et al. concluded that soldiers who had greater exposure to the JOIN were more satisfied with pay, job security, supervision, and job growth than soldiers with less exposure. Furthermore, soldiers with greater exposure to the JOIN stated that they have received more complete information about the Army than soldiers with less exposure. Although Lockhart et al. concluded that the JOIN was an effective RJP, their results do not lend strong support for their conclusions. Of their five hypotheses related to the effectiveness of the JOIN, the results supported only one hypothesis (that JOIN increases completeness of information given to soldiers).

More research may have to be conducted on the RJP aspects of the JOIN. The change in perceptions from new to more experienced soldiers along with the tenuous findings from JOIN research (Lockhart, et al, 1987) show the need for further research. However, any type of RJP may not be effective for new soldiers. Lockhart et al. found that over 80% of the soldiers surveyed stated that it is impossible to understand Army life or one's Military Occupational Specialty (MOS) before experiencing it. Based on this finding, research should be conducted to 1) determine if RJPs, in general, can be effective for new soldiers and, if RJPS can be effective 2) determine how RJPs can be structured and what information it should present in order to be more effective.

Due to the response bias to NRS attributes, the inclusion of these attributes on the NRS needs to be examined. With the response bias and the influence of recruiters, the attributes are not an accurate or direct measure of advertising effectiveness. It is probable that these items only measure new soldiers' positive biases. Deleting these items from the NRS may be considered. However, the items could be used to measure the effects of RJPs on new soldier perceptions and expectations. The response bias may also be reduced and accuracy increased by administering the NRS at a time closer to the point of purchase.

Elig, Weltin, Hertzbach, Johnson, and Gade (1985) have noted that the NRS may provide better responses if it was administered at the military enlistment processing station (MEPS) or at the recruiting station. Administering the NRS closer to the time when the recruit is contracted is also recommended here. Plans are now being developed at USAREC to move the administration of the NRS to the MEPS.

RETS. It may also be true that the RETS attributes do not assess advertising effectiveness. Because the RETS is administered to experienced soldiers, it is likely that the soldiers recall Army experiences they have had rather than advertising when responding to the items. Thus, the frame of reference they use is Army experiences. The RETS attributes are a better measure of perceptions based on experience rather than perceptions based on advertising. However, RETS responses can be used to develop advertising strategy and recommend revisions to some Army procedures and policies. Those attributes with positive responses can be emphasized in advertisements. These advertisements would present a positive, and realistic, picture of an Army opportunity to youth. Those attributes with more negative responses may suggest that certain Army procedures or policies need to be revised in order to make the opportunities more available in the Army. Although the RETS attributes do not assess advertising effectiveness, they do serve other purposes that are important to advertising and Army life.

ACOMS. Of the three surveys, ACOMS attributes provide the most accurate measure of advertising effectiveness. The responses are not influenced by recruiter contact or Army experiences. The youth's frame of reference is advertisements, while the new soldier's is advertisement and recruiter contact, and the soldier's is experience. Further, the responses come from a sample of potential "customers" rather than individuals who are already in the Army. Since advertising is directed at this sample, knowledge of the perceptions of this sample is needed. Assuming the NRS sample accurately reflects the youth population is questionable because of the point in time the NRS is administered. In addition, NRS respondents have already been "sold" on the Army. What information is needed is what attributes of the Army persuade individuals to join the Army. ACOMS attribute responses provide some of this information. ACOMS responses do assess how well information about Army opportunities is getting to potential recruits. ACOMS responses can also be used to focus on what attributes need further emphasis and what Army policies need to be changed in order to make the Army more attractive. It is recommended that surveys like ACOMS continue to be used to assess the effects of advertising.

Summary

The purpose of this research was to examine how respondents in different samples perceive the Army's advertising attributes and to make comparisons of the attributes across three surveys.

The findings from this report suggest that new and experienced soldiers perceive of more opportunities in the Army than youth surveyed in ACOMS. However, soldiers classified the attributes into only two categories, **Self-Improvement** and **Work/Education Related**. Consistent results were found across the samples for what attributes had the greatest and least opportunity to be met in the Army. The samples saw a greater opportunity for **Self-Improvement** attributes and **money for education** than from **Work Related** attributes. Comparisons of attribute means across samples found that new soldiers saw greater opportunities in the Army than experienced soldiers and youth. Surprisingly, youth had more favorable perceptions of opportunity than soldiers. The differences in means across the samples may have been due to the use of different frames of reference in responding to the items for each sample.

Future research should examine the RJPs being utilized to lower new soldiers initial expectations of the Army. Their expectations need to be lowered to better match the perceptions of more experienced soldiers. More realistic perceptions may improve satisfaction, retention, and self-selection. The point of administration of the NRS should also be moved to the MEPS to improve the quality of responses. Finally, further research on the making the decision to join the Army should be conducted. Examination of 14 attributes provides useful information, but many other variables (influence of parents, economic conditions, military stereotypes, etc.) need to be considered to better understand the complex process of military enlistment.

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APPENDIX A

LIST OF ADVERTISING ATTRIBUTE ITEMS

VARIABLE NAME/SURVEY	SHORT TITLE	QUESTION
R062/RETS Y010/NRS YXWIDE/ACOMS*	Variety of job opportunities	The (service) offers a wide variety of opportunities to find a job you can enjoy.
R063/RETS Y011/NRS YXPHYS/ACOMS**	Physical challenge	The (service) provides a physically challenging environment.
R064/RETS Y012/NRS YXPROUD/ACOMS	Proud experience	(Service) service is an experience you can be proud of.
R065/RETS Y013/NRS YXSTEP/ACOMS**	Advantage over going right from H.S. to college	The (service) experience gives you an advantage over going right from high school to college.
R066/RETS Y014/NRS YXLEADER/ACOMS	Leadership skills	The (service) offers the best opportunity to develop leadership skills.
R067/RETS Y015/NRS YXHITECH/ACOMS**	Working with high-tech equipment	The (service) gives you the chance to work with sophisticated, high tech equipment.
R068/RETS Y016/NRS YXCIVCAR/ACOMS	Civilian career development	(Service) service is a great value in your civilian career development.
R069/RETS Y017/NRS YXSELCON/ACOMS	Develop self confidence	The (service) offers an excellent opportunity to develop self confidence.
R070/RETS Y018/NRS YXPOTEN/ACOMS	Develop potential	The (service) offers the opportunity to develop your potential.
R071/RETS Y019/NRS YXMENTAL/ACOMS	Mental challenge	The (service) provides a mentally challenging environment.
R072/RETS Y020/NRS YXMATURE/ACOMS	Develop responsibility and maturity	The (service) experience helps you to develop into a responsible mature person.

APPENDIX A

LIST OF ADVERTISING ATTRIBUTE ITEMS

VARIABLE NAME/SURVEY	SHORT TITLE	QUESTION
R073/RETS Y021/NRS YXTRAIN/ACOMS	Skill training	The (service) offers many opportunities for training in useful skill areas.
R074/RETS Y022/NRS YXHIQUAL/ACOMS	Working with quality co-workers	The (service) gives you many chances to work with high quality people.
R075/RETS Y023/NRS YXCASHED/ACOMS	Money for education	The (service) provides an excellent opportunity to obtain money for a college or vocational education.
Y024/NRS	Women belong	Women belong in the (service) as much as men.
Y025/NRS	Beneficial for Men/Women	The (service) experience is as beneficial for women as it is for men.
Y026/NRS	Opportunity for Women	The (service) provides women an opportunity to prove themselves.
Y027/NRS	Serve country	The (service) offers an opportunity to provide service to your country.

* Not included in the Civilian Work category.
** Not included in the Reserves and National Guard categories.